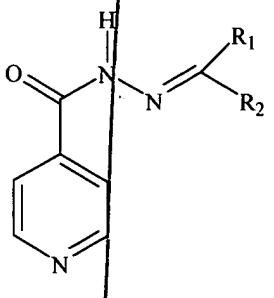
1. An antimycobacterial compound which comprises the formula:



I

wherein R_1 is H; and

R_2 is C_3 to C_{14} alkyl, C_3 to C_{10} substituted alkyl, C_2 to C_{10} alkenyl, C_2 to C_9 substituted alkenyl, C_2 to C_9 substituted dialkenyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, phenyl, substituted phenyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, benzyl, substituted benzyl, naphthyl, substituted naphthyl, heterocycle, substituted heterocycle, halo, hydroxy, amino, or carboxy;

or a pharmaceutically acceptable salt thereof; or a pharmaceutical isomer thereof; or a combination of the same.

2. The antimycobacterial compound according to claim 1 wherein R_1 is H; and

R_2 is $CH=CHCH_3$ (trans), $CH=CHCH_2CH_3$ (trans), $CH=CHCH_2CH_2CH_3$ (trans), $CH=CHCH_2CH_2CH_2CH_3$ (trans), $C(CH_3)=CHCH_3$ (trans), $CH=C(CH_3)CH_2CH_2CH=C(CH_3)_2$ (trans), $CH=NNHCO\text{-}4\text{-}C_5H_4N$, $CH_2CH(CH_3)CH_2CH_2CH=C(CH_3)_2$, $4\text{-}C_6H_4\text{-}CH=NNHCO\text{-}4\text{-}C_5H_4N$, $4\text{-}C_6H_4\text{-}O\text{-}CH_2CH_2CH_2CH_3$, $(CH2)_{11}CH_3$, $4\text{-}C_6H_4NO_2$, C_6H_5, $2\text{-}C_6H_4OH$, $4\text{-OH-}3\text{-}OCH_3C_6H_3$, $4\text{-}C_6H_4OCH_3$, $3\text{-}C_6H_4OCH_3$, $(CH_2)_8CH_3$, $(CH_2)_2CH_3$, $2\text{-}C_6H_4OCH_3$, $C(CH_3)=CHC_6H_5$ (trans), $4\text{-}C_6H_4F$, $3,5\text{-di}(CH_3)\text{-}4\text{-O-}C_7H_7$, $2\text{-F-}4\text{-}OCH_3C_6H_3$, $2\text{-}ClC_6H_4$, $4\text{-}BrC_6H_4$, $3\text{-}C_6H_4NO_2$, $4\text{-}C_6H_4O(CH_2)_5CH_3$, $2\text{-Cl-}5\text{-}NO_2C_6H_3$, $4\text{-Cl-}3\text{-}NO_2C_6H_3$, $2\text{-}C_6H_4NO_2$, 2-6-

di(Cl)C_6H_3, 2,3-di(Cl)C_6H_3, C_6H_5, 3,4-di(F)C_6H_3, 2,6-di(F)C_6H_3, 3,4-di(Cl)C_6H_3, 4-C_6H_4Cl, or $CH=C(C_6H_5)_2$.

3. The antimycobacterial compound according to claim 1 wherein R_1 is CH_3; and

$R_2 = CH_2COCH_3$, CH_3 $CH_2CO_2CH_2CH_3$, or C_6H_5.

4. The antimycobacterial compound according to claim 1 wherein R_1 is $CH_2CO_2CH_2CH_3$; and

R_2 is $CH_2CH_2CH_3$.

5. The antimycobacterial compound according to claim 1 wherein R_1 is $CO_2CH_2CH_3$; and

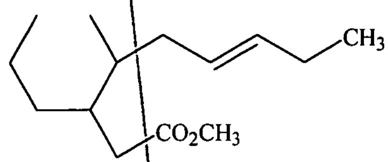
R_2 is $H_2CH_2C_6H_5$.

6. The antimycobacterial compound according to claim 1 wherein R_1 is 2-C_5H_4N; and

R_2 is 2 -$C_5H_4N \cdot 2H_2O$.

7. The antimycobacterial compound according to claim 1 where R_1,R_2 is $(CH_2)_4$, $(CH_2)_6$,4-C_6H_8NNHCO-4-C_5H_4N.

8. The antimycobacterial compound according to claim 1 where R_1,R_2 is



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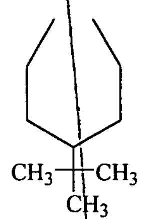
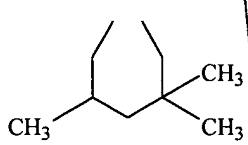


or



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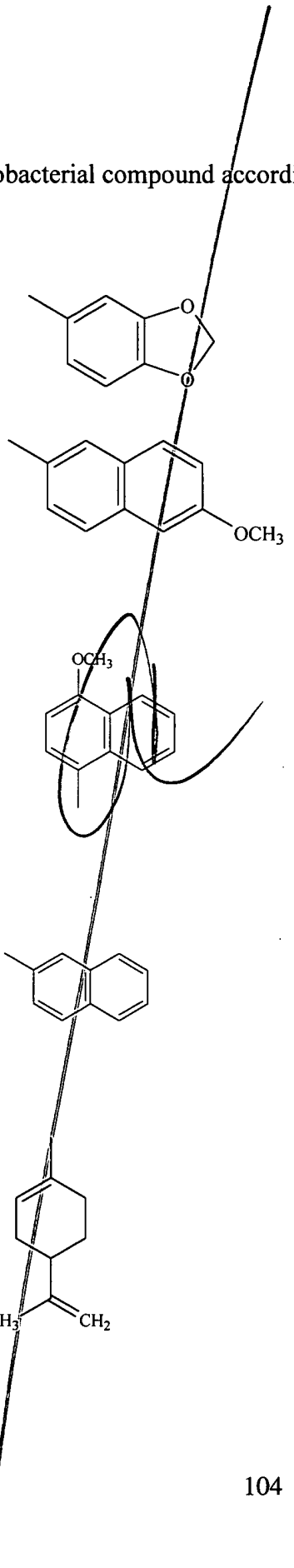
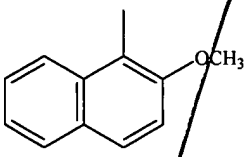
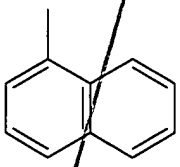
9. The antimycobacterial compound according to claim 1 wherein R_1 is H; and R_2 is

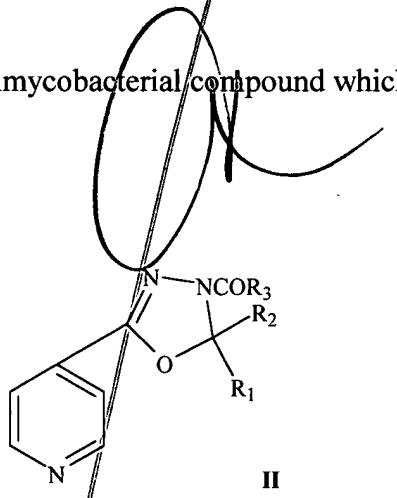




or



10. An antimycobacterial compound which comprises the formula:



II

wherein R_1 is H; R_2 is C_3 to C_{14} alkyl, C_3 to C_{10} substituted alkyl, C_2 to C_{10} alkenyl, C_2 to C_9 substituted alkenyl, C_2 to C_9 substituted dialkenyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, phenyl, substituted phenyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, benzyl, substituted benzyl, naphthyl, substituted naphthyl, heterocycle, substituted heterocycle; and

R_3 is C_1 or C_2 alkyl; or a pharmaceutically acceptable salt thereof; or a pharmaceutically acceptable isomer thereof; or a combination of the same.

11. The antimycobacterial compound according to claim 10 wherein R_1 is H; R_2 is 2,6-di(Cl)C_6H_3, 3-NO_2-4-Cl-C_6H_3 , 3,4-di(F)C_6H_3 , 2-$C_6H_4NO_2$, 3,4-di(Cl)C_6H_3 and 2,6-di(F)C_6H_3; and

R_3 is CH_3 .

12. The antimycobacterial compounds according to claim 10 wherein R_1 is CH_3; R_2 is CH_3; and

R_3 is CH_2CH_3 or CH_3.

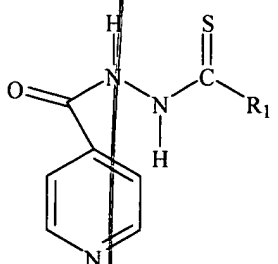
13. The antimycobacterial compounds according to claim 10 wherein R_1 , R_2 is $(CH_2)_5$; and

R_3 is CH_3.

14. The antimycobacterial compound according to claim 10 wherein R_1 is CH_3; R_2 is C_6H_5; and

R_3 is CH_3.

15. An antimycobacterial compound which comprises the formula:



III

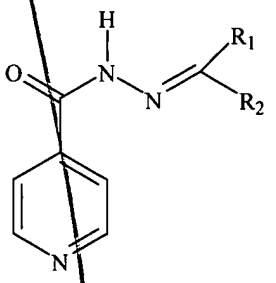
wherein R_1 is C_2 to C_6 alkyl, C_2 to C_6 substituted alkyl, C_2 to C_{10} alkenyl, C_2 to C_{10} substituted alkenyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, phenyl, substituted phenyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, benzyl, substituted benzyl, naphthyl, substituted naphthyl, heterocycle, substituted heterocycle;

or a pharmaceutically acceptable salt thereof; or a pharmaceutically acceptable isomer thereof;

or a combination of the same.

16. The antimycobacterial compound according to claim 15 wherein R_1 is NHC_6H_5 , $NH\text{-}4\text{-}C_6H_4CH_3$, $NH\text{-}4\text{-}C_6H_4Br$ or $NH\text{-}4\text{-}C_6H_4Cl$.

17. A method for producing an antimycobacterial compound comprising the formula of:



I

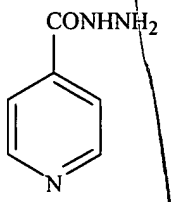
wherein R_1 is H or CH_3; and

wherein R_2 is C_1 to C_{14} alkyl, C_2 to C_{10} substituted alkyl, C_2 to C_{10} alkenyl, C_2 to C_9 substituted alkenyl, C_2 to C_9 substituted dialkenyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, phenyl, substituted phenyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, benzyl, substituted benzyl, naphthyl, substituted naphthyl, heterocycle, substituted heterocycle, halo, hydroxy, amino, or carboxy; or

wherein R_1R_2 = C_4 to C_8 cycloalkyl or C_4 to C_{10} substituted cycloalkyl;

which comprises:

refluxing



(1)

with absolute ethanol to produce a solution;

adding a carbonyl compound comprising the formula of:

R_3COR_4 **(2)**

wherein R_3 = H or CH_3; and

wherein R_4 = C_1 to C_{14} alkyl, C_2 to C_{10} substituted alkyl, C_2 to C_{10} alkenyl, C_2 to C_9 substituted alkenyl, C_2 to C_9 substituted dialkenyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, phenyl, substituted phenyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, benzyl, substituted benzyl, naphthyl, substituted naphthyl, heterocycle, substituted heterocycle, halo, hydroxy, amino, or carboxy; or

wherein R_3R_4 = C_4 to C_8 cycloalkyl or C_4 to C_{10} substituted cycloalkyl;

to the solution to produce a reaction mixture;

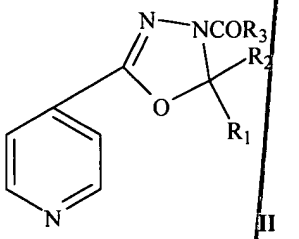
distilling the reaction mixture;

adding diethyl ether to the reaction mixture;

filtering the reaction mixture; and

drying the filtrate to produce **I**.

18. A method for producing an antimycobacterial compound comprising the formula of:



II

wherein R_1 = wherein R_1 is H or CH_3

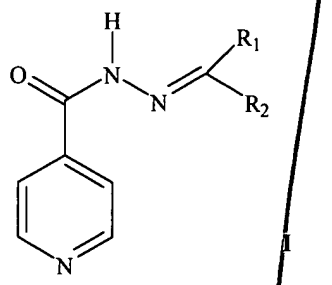
wherein R_2 = C_1 to C_{14} alkyl, C_2 to C_{10} substituted alkyl, C_2 to C_{10} alkenyl, C_2 to C_9 substituted alkenyl, C_2 to C_9 substituted dialkenyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, phenyl, substituted phenyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, benzyl, substituted benzyl, naphthyl, substituted naphthyl, heterocycle, substituted heterocycle, halo, hydroxy, amino, or carboxy; or

wherein R_1R_2 = C_4 to C_8 cycloalkyl or C_4 to C_{10} substituted cycloalkyl;

wherein R_3 = C_1 or C_2 alkyl

which comprises:

refluxing



1

wherein R_1 is H or CH_3; and

wherein R_2 is C_1 to C_{14} alkyl, C_2 to C_{10} substituted alkyl, C_2 to C_{10} alkenyl, C_2 to C_9 substituted alkenyl, C_2 to C_9 substituted dialkenyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, phenyl, substituted phenyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, benzyl, substituted benzyl, naphthyl, substituted naphthyl, heterocycle, substituted heterocycle, halo, hydroxy, amino, or carboxy; or

wherein R_1R_2 = C_4 to C_8 cycloalkyl or C_4 to C_{10} substituted cycloalkyl;

with a carboxylic acid anhydride comprising the formula of:

$(RCO)_2O$ **(3)**

wherein R = C_1 or C_2 alkyl

to produce a reaction mixture;

drying the reaction mixture;

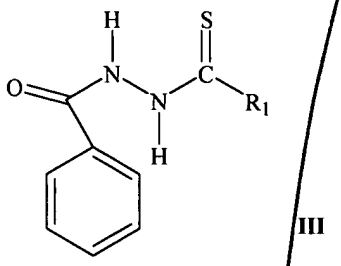
adding ether to the reaction mixture to form a solution;

separating the ether from the solution to yield an aqueous layer;

extracting the aqueous layer with ether;

drying the ether extracts to produce **II**.

19. A method for producing a compound comprising the formula of:

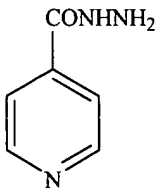


III

wherein R_1 = C_1 to C_6 alkyl, C_2 to C_6 substituted alkyl, C_2 to C_{10} alkenyl, C_2 to C_{10} substituted alkenyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, phenyl, substituted phenyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, benzyl, substituted benzyl, naphthyl, substituted naphthyl, heterocycle, substituted heterocycle;

which comprises:

refluxing



(1)

with ethanol to produce a solution;

adding an isothiocyanate comprised of the formula of:

RN=C=S **(5)**

wherein R= C_1 to C_6 alkyl, C_2 to C_6 substituted alkyl, C_2 to C_{10} alkenyl, C_2 to C_{10} substituted alkenyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, phenyl, substituted phenyl, C_7 to C_{16}

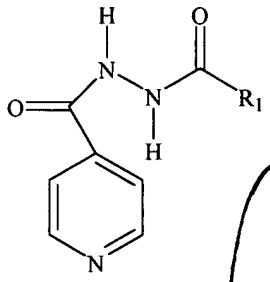
phenylalkyl, C_7 to C_{16} substituted phenylalkyl, benzyl, substituted benzyl, naphthyl, substituted naphthyl, heterocycle, substituted heterocycle;

to the solution to form a reaction mixture;

cooling the reaction mixture;

filtering the reaction mixture to produce **III**.

20. A method for producing an antimycobacterial compound comprising the formula of:

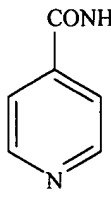


(IV)

wherein R_1 = C_1 to C_6 alkyl, C_2 to C_6 substituted alkyl, C_2 to C_{10} alkenyl, C_2 to C_{10} substituted alkenyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, phenyl, substituted phenyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, benzyl, substituted benzyl, naphthyl, substituted naphthyl, heterocycle, substituted heterocycle;

which comprises:

adding diethyl ether to



(1)

to produce a solution;

boiling the solution;

adding a carboxylic acid anhydride comprising the formula of:

$(RCO)_2O$ (4)

wherein R= C_1 to C_6 alkyl, C_2 to C_6 substituted alkyl, C_2 to C_{10} alkenyl, C_2 to C_{10} substituted alkenyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, phenyl, substituted phenyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, benzyl, substituted benzyl, naphthyl, substituted naphthyl, heterocycle, substituted heterocycle;

in ether to the solution to form a reaction mixture;

refluxing the reaction mixture;

cooling the reaction mixture to produce **IV**.